

DERWENT-ACC-NO: 1999-072130  
DERWENT-WEEK: 200026  
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TITLE: Porous material especially single crystal silicon  
layer production - by  
stressing to detach porous layer from substrate at desired  
fracture region

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PRIORITY-DATA: 1997DE-1027791 (June 30, 1997) ,  
1997DE-1058300 (December 31,  
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PATENT-FAMILY:

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PAGES	MAIN-IPC	
DE 19730975 A1	January 7, 1999	N/A
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DESIGNATED-STATES: DE FR GB

APPLICATION-DATA:

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APPL-DATE		
DE 19730975A1	N/A	1997DE-1030975
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EP 996967A2	N/A	1998EP-0935004
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EP 996967A2	Based on	WO 9901893
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RELATED-ACC-NO: 1999-106314

ABSTRACTED-PUB-NO: DE 19730975A

BASIC-ABSTRACT: In a layer production process in which a void-containing preferably porous material layer is produced on or from a substrate e.g. of single crystal, p-type or n-type Si, at least part of the layer is separated from the substrate using the void-containing or porous material layer as a desired fracture region by producing mechanical stress within or at a boundary surface of the void-containing or porous material layer. Also claimed is a method of producing a substrate for semiconductor epitaxy by forming the porous layer as described above, applying a second substrate onto the free surface of the porous material layer and then separating the second substrate, together with at least part of the porous material layer, from the first substrate by means of the above process. Further claimed are (i) a substrate especially of single crystal semiconductor material and with a porous material layer on its surface, the free surface of the porous material layer being structured; (ii) a substrate of any solid material with one or more sections of a porous single crystal semiconductor material adhering to its surface, the crystal direction being the same in all the sections; (iii) a substrate consisting of a flexible strip with a strip of porous single crystal semiconductor material on its surface; and (iv) a photocell and a radiation detector.

USE - The process is useful for producing porous silicon layers of solar cells, photocells and radiation detectors on transparent plates.

ADVANTAGE - The process allows production of thin porous high quality single crystal silicon layers with increased light absorption using low production temperatures and inexpensive foreign substrates.

CHOSEN-DRAWING: Dwg.1/20

TITLE-TERMS:

POROUS MATERIAL SINGLE CRYSTAL SILICON LAYER PRODUCE STRESS  
DETACH POROUS LAYER  
SUBSTRATE FRACTURE REGION

DERWENT-CLASS: L03 U11 U12

CPI-CODES: L04-C01; L04-E05;

EPI-CODES: U12-A02A2; U12-A02A2F; U12-A02A2X;

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